

RECORD

Mar. 5

$3\frac{1}{2}$ oz
6 oz

April 13 little turtle

$3\frac{3}{4}$ oz
~~56~~

larger
photo this day

Jan. 20-26

$2\frac{1}{2}$ oz
 ~~$4\frac{3}{4}$~~ oz

June 12 Photo
larger 138.5 gr.
smaller 131.

$6\frac{1}{2}$ -7 $6\frac{3}{4}$
() oz
($4\frac{3}{4}$ -5)

Oct. 9 Photo

larger.
smaller.

10 oz
 $7\frac{1}{2}$

April 15-1936 younger = $5\frac{3}{4}$ inch. $23\frac{1}{4}$ oz
older = $5\frac{5}{8}$ inch. 22 oz.

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heavily wetted sea urchin

Subsidence cap.

Got unpacked.

Voyage of Velero III leaving S.C. 1
Dec. 3, 1933

Dec 30 The steel cruiser Velero III Capt. G. Allan Hancock left the dock at Terminal Island, Los Angeles Harbor at 11.05 a.m. In an expedition to Guayaquil via the Revillagigedo Is. the Galapagos to return via Panama along the main coast. Most of the time today spent in the Eufed were from S.A. a near as far there were four scientists from points outside of Calif. Mr. W.S. S.T. Curciologist Mr. W.B. Taylor. U.M. algologist R.H. G. Mante ^{U.S.} specialist in hematology & H.C. W.C. Jones. U.B.C. in Hydroids

The air. T. 59° F W.T. 58°
In Catalina Channel the sea was somewhat choppy and the weather was dull with rain or squalls. The Galapagos Is. could be seen but dimly when they could be seen at all.

Cronado Id. was ahead at 6.52 ^{P.M.}
Dec. 31 The tent is slowly rising the air was 60° F at 4 a.m. rising to 75° at 4 p.m. but down to 62° ^{again} at midnight W.T. 61-64° Animal life scarce. San Benito & Cedros Id. came in sight at 3.14 p.m. and were ahead about 4 p.m. A couple of mize reeds in the evening followed by music of Velero ensemble. This was repeated regularly each evening unless prevented

S.A. as of most floods & history

and up to the did not all further or both.
The weather was cloudy most of the day but
cleared a little at times, sea smooth.

Jan. 1. A.T. 63° in the morning, reached a high of 89
at 4 p.m. and back to 69 later, W.T. grad
increased from $64-72^{\circ}$. The weather cleared
the most of the day with a following sea.

Rene Langman and Stan - Col. for fall
game was the radio - (the radio set is
identically very efficient and the operator is well
judging for the contact with the rest of the
world maintained at all times.

Saw the first flying fish of the trip
and the first gannet.

Jan. 2. A.T. 67° at 4 a.m. 70° at 8 a.m. not later
in rest of day W.T. $74-77^{\circ}$

Morning lighter with following sea. Anchored
in Brathwaite Bay on the south coast of
Socorro I. the easternmost Id of the Reil-
gods group at 3.59 p.m. 99.3 miles
from S.A. approaching the id. from the N.

— rock is rather conspicuous. The
west side of this Id. is more precipitous especially
near shore Lat. Socorro $20^{\circ}35'N$ $106^{\circ}37'W$.
Mt. Everest 3707 feet high in the single
large volcanic cone but there are several
smaller (some quite small) on its flanks.
The whole id. is volcanic & the general
appearance due to the exposed lava & lack
of green vegetation is anything but inviting.

Large sand boulders.
 There got about a dozen & nearly got
 fish was but trapped in between
 it against the very temporary murens

It is not particularly difficult to walk on the
 lawn but it is to be done carefully & slowly.
 The ash cone to the westward of Brattvaag Bay
 is quite a characteristic feature of the island
 near the shore here there is not much ash
 but the beach is difficult to pass through
 because it is thick.

The birds that had been very scarce on
 the way southward were plentiful again & soon.
 The large frigate birds being perhaps the
 most conspicuous. In Brattvaag Bay the fish
 are abundant and varied. Here & every-
 where in shallow water sharks are abundant
 mantas are present but not so numerous
 as in other localities later visited. In the
 pools and off the rocks near the shore fish were
 very abundant of many species some of the
 fish with very brilliant coloration. Dolphins
 were abundant.

The beach is covered with large rocks.
 That makes landing slightly difficult unless
 the rock is slight. Several species of birds
 are evident but these are quite striking large
 albatrosses are plentiful on many of the rocks
 and crabs are numerous. In the pools
 & crevices there are anemones mostly solitary
 but in places the segregated Epizoanthum
 socialis may cover a rock 20 or 30 or
 feet of rock. Siphon coral heads near of
 about low tide shells may outcrop & the former
 A tuna fishing boat anchored near by.

Jan. 3. A.T. 66° at 4 a.m. + 68° at 12 p.m. Not taken
the interval W.T. $76-77^{\circ}$ Clear most of
the day. smooth sea. The dredging in 16-18 f on
bottom with mullpore and sand gave little
variety altho of course the material was
interesting because it was different there
were three species of hydroids, one fenestrated
rugose hyzom colonial, a starfish, a large
echinoid, a small starfish, a few gastropods.

Jan 4. A.T. 68 to 82° at 4 p.m. W.T. $78-74^{\circ}$
Clear in a.m. Cloudy in afternoon. Heavy swell.
Left anchorage at 3:16 p.m. for Clavin Id.

Jan 5. A.T. $68-82$ to 73° W.T. $74-76^{\circ}$. Arrived
at Clavin Id. (westernmost of R. group)
at 7:40 a.m. dist. 220 miles. Total dist
1213 miles. Clavin Id. Lat. $18^{\circ}10'N$. $114^{\circ}36'W$.
5 miles long 1-2 miles wide in high & abrupt
to the west north & east. & slopes to the S. There
volcanic peaks. 1100, 933 + 959 feet high.
Vegetation & fauna somewhat irregular to
type of S. I. I. A lagoon near the south
shore was dry at this time.

The dredging gave much the same type of
material. Overcast or at least partly
cloudy all day. Left anchorage at 3:37 p.m.
for Clipperton Id.

Jan 6. A.T. 75° to 86° aft noon to 75° W.T. $76-81^{\circ}$
Overcast all day. Drizzle, shifting strong
travelling all day.

Two Duth cross ahead high
in leaves.

Got a hybrid of the single
Mamea
Two being of water plant

Kept time party. Harry got ducked &
got made.

Jan. 7. A.T. 77° to 91° at 4 p.m. to 78° W.T. $81-82^{\circ}$
stopped at Clipperton I ($10^{\circ}17'N$, $109^{\circ}13'W$) from
1.05-2.38 p.m. the ship lying to. Clipperton
is about a couple of miles across with a
prominent rock 62 feet high on its northwest
edge. A few *Scaevola* & some other vege-
tation on the island. No record of getting on
the island. The surf was very heavy, so
landing was attempted. The dory for the whale
boat was not very successful as the water
was so deep until near dusk & there the
bottom was rocky. Cloudy with rain
squalls during the day. Set W for the
Galapagos Ids.

Jan. 8. Travelling all day. A.T. $77^{\circ}-89^{\circ}$ at 4 p.m.
to 78° W.T. $80-81^{\circ}$ Clear in morning but
partly cloudy late in the day. Rain squalls
late in the afternoon.

Jan. 9. Travelling all day. A.T. 77° to 95° at 4 p.m.
to 75° W.T. $81-82^{\circ}$ Fairly bright all
day but cloudy with rain squalls toward
evening. Heavy swell beginning the middle of
the afternoon.

Jan. 10. A.T. 76° to 84° to 75° W.T. $78-81^{\circ}$ Overcast
the most of the day with rain. Heavy swell
continued. Travelling all day.

Jan. 11. A.T. $76-79-73^{\circ}$ W.T. $79-80^{\circ}$
Cloudy with rain in the morning clearing
somewhat in the afternoon. Swell decreased.
Passed Clipperton I ($10^{\circ}39'N$, $92^{\circ}W$), the first

1° 22' 1/2" N.
71° 49' W.

front of the Gulafayn Id. - about 10 mi. to
front of the Id. It is somewhat regular
in shape 550 ft. high about 2 mi. long
Say to the north east of Wrenn Id.
where there is a smaller Id. off shore. 12.13 p.m.
There is a really a group of three isls that
appear. approx. precipitation - 830 feet high.
The party has been ashore reported & all
conditions for being high, but next day
is very much lighter & so have coll. all good.
The dredging from the shore to the sea was somewhat
difficult for account of the reef & the curved
and the dotty sea, there is but some
very good material was obtained in from
120 to 150 f. Bottom coral, mollusks, Caridean
crustaceans. Bottom Bryozooid material both
in the dredged & in the shore material obtained.
Sept. Wrenn. In Albemarle (Isabella) at 10.20 p.m.
Jan. 12. G. T. 72 (water temp. in middle of day) W. T. 76°.
Clear in morning. Partly cloudy in afternoon.
Anchored in the east of the north point of Al-
bemarle island at 7.15 a.m.
110 miles from Wrenn. T. distance 3070 mi.
Rather heavy & dotty sea.
Albemarle island is the largest id of the
group & is somewhat the most interesting. It
is shaped somewhat like a golf with the
front somewhat broader than the legs. While
the greatest length from north to south is
about 75 miles. The legs measured from

The L. L. L. L. L. N. W. + S. E. is 65 miles. & the
 fort. from the head to the toe N. E. to W. S. is 45 mi.
 The greatest width of the leg is 18 mi & of the
 fort. 22 mi.

Perhaps in no other area in the world equals
 Albemarle as a demonstration of volcanism.
 The other islands in the group give good demon-
 strations but in this respect Albemarle
 is supreme. It consists in the main of
 five large volcanoes, three in the leg
 4000, 4000, 3700 feet. & two in the fort
 4225, 5000 feet. The connection bet. the
 leg & the fort - very picturesque is of low
 altitude, but the other connections are
 much less so. Two of these volcanoes were
 slightly active. The younger one had a slight
 steam vent on its northern face & the
 second from the south with several vents
 on its northern face. On all of the slopes
 of these large volcanoes there are numerous
 cones & craters of all sizes. So numerous
 are these cones that on the south western
 slope of the northern mountain extending
 down to Christ the King Point the appearance
 is fantastic in the extreme. It would be
 impossible to count them except from the
 air. In many of the craters large secondary
 or even tertiary cones within them. On all
 the slopes steep lava flows. Many of
 them reaching the sea are distinctly broken.

All near Cape Berkeley


In many cases, the lava was evidently very fluid, but in other less so. There are few if any ash or cinder cones. Albemarle id. is low & the slope to the mountains is gradual. But the western portion of the north west coast is in the main the half of a huge crater, with the rearward half missing; & the western portion of it there is a fair sized secondary cone the rim of which is low enough on the rearward side to show a tertiary cone within the crater. Near the western rim of the large crater there is a small cone that has been split so exactly in the middle that the rearward half has been removed, the flow hole is evident throughout its whole length & the layers of lava show the stratification of their formation.

The day was altogether in the morning the sea was too choppy.

A sandy beach near the point made landing somewhat less tedious. The tide was not low enough to get a good idea of the shore forms. The dunes & rocky heights & fort cuts were conspicuous. There were spring lobsters & some of the porpoises, & seals were heard but not very plentiful. The main ignorance was evident in the sea.

Before we arrived

There were some small mangrove lagoons near shore and these contained small mollusks & crustacea. There was much variety in birds: - pelicans, large gulls, night herons, great blue herons, frigates, immatures, pelicans shearwaters &c. There as elsewhere the birds are not very abundant or very varied. There were turkeys flying about nearly when the ~~Valer~~ was anchored at Albermarle Pt.

Jan. 13 A.T. 71°-77° at 12 pm. to 67° water temp. 72°-74° although these two locations are near the equator (Albermarle Pt. less than 10 miles north) it was decidedly cool when a breeze was blowing. Day bright all day. Left anchorage at 8.25 am to pass around the south end of Albermarle (Rodrigo Rock visible 12 miles from shore ) and along the west coast to Jagers Cove where there is a well sheltered anchorage in a cove. Anchored at 12.21 pm. Total dist. 31 2/4 miles. At 11.15 a launch party left the ship to explore the shore from Banks Bay to Jagers Cove. Succeeded in the afternoon with greater success than at any time previously not only for hydrozoa but for the other groups in demand. Amphioxus Haemaphysalis for the first time. The marine iguana here becomes much larger than those seen at Albermarle Pt. Great masses of solitary coral of a

brilliant orange color is very characteristic on the walls above low tide.

Birds & fish are plentiful as usual. The appearance of the fish, showing by the color of the scales is rather striking. Several other fish are common & they show up their expansive fins very well in the light until they are disturbed by the ubiquitous sharks. A dark long bodied fish here but it does not look so large when it is suspended out of water or when swimming in the water. A couple of small lakes and reported not far from shore.

Jan 14. A.T. 68°-77° at noon to 67° W.T. 72°.
Clear & partly cloudy - sea smooth in general. but somewhat choppy in the channel when the breeze gets up in the afternoon.
A land party went over to Harbourside Id. in the afternoon - Harbourside is much the same in length & breadth 16 or 17 miles. It has but the one large volcano 4329' not far from the center. The slope is rather rapid in the upper portion and very gradual in the portion next the shore, so that a large portion of the island is of low altitude. The secondary cones are most numerous on the easterly slope and this slope shows several lava flows some of which were quite recent. Capt. Hancock observed an eruption & lava flow in

The lagoon is nearly all rough even when it extends into the sea. There are numerous indentations on the north east shore almost entirely shut off from the lagoon. The vegetation is high & green much in the form of them are much covered with mangroves. The marine turtle & the sea lion seem to favor these lagoons to some extent. Marine iguanas many of large size are more abundant here than at any of the islands visited. Birds are plentiful. In the evening the "may flower" came into flower. Mr. Jager was to get aboard by 2 o'clock but as he was soon leaving for San Angeles he took mail from the Velero III.

Jan. 15 A.T. 65° to 83° at noon to 67° latitude 69° to 70°. Partly cloudy all day. Breeze in afternoon made an early morning visit to a reef north of Jager. Mr. Jager took this reef is not connected with the main land and is exposed for but a short time at low tide. The surf runs pretty strong and it is not the easiest spot landing and getting off. The collecting was nothing to enthuse over. A few white shells were secured in abundance. The day was again with white. The afternoon was promising well but the sea became too choppy in the

of the crew it could be carried on more rational
 fact. This our most strenuous day in
 the Galapagos.

Jan 16.

A.T. 72° to 77° at 12h. 67° W.T. 70° - 76°
 Clear most of the day sea smooth.
 Left Anchorage at Jacuz Cove 5.25 a.m. to
 go on to the P.O. at 8.10 to 10.43 a.m.
 The hr. swell made a terrible
 landing to get some photographs of the fantastic
 craters & cones near shore. Then sailed
 for Black Beach anchorage on west coast of
 Charles Id. Anchored at 4.07 p.m. dist.
 Jacuz Cove. to B. Beach 115 miles. Still
 3237 miles. (Flores, Santa Maria)
 Charles Id. ($1^{\circ}20'S$, $90^{\circ}27'W$) is about
 10 miles long E-W and 7 miles broad N-S. There
 are two large volcanoes towards the north
 coast, 1500 & 1780 both visible from the anchorage
 to the Black B. anchorage. The slope to the
 north coast is quite gradual and there are
 comparatively few secondary cones. Black B.
 anch. at the west & P.O. Bay to the north
 serve as safe anchorages in normal
 weather. Both of these were used in the
 cruise. As we bay there is still evidence
 of a whaling station for P.O. Bay & the ship
 is evidence of it although it has not
 been rebuilt in recent years. A light
 house made of oil drums is a characteristic
 feature of the line and a Post Office with

of a bbl or a pot. nearly still in use but
 mail is not collected by the very regu-
 larly. There are several small inhabitants
 of the island at the present time. Mr.
 Rutter & Dore (which will be called by
 Rutter but "maning" does not occur in the
 dictionary used in these islands) live on the
 western side. Their home being in plain
 view from the B.B. Arch. They have been
 there for 4 1/2 years, and by dint of mud
 labor they have made a garden that
 might be considered as a poor imitation
 of a native tropical garden. Bananas
 papayas, a little sugarcane and some
 vegetable plants a neagre fare. The soil
 although is rich enough but lacks of a
 reasonable supply of water makes anything
 much better impossible. Their house is
 little more than a shelter and while they have
 numerous canoe affluences for carrying
 on a cultivation and for making use of the
 crops it must take them in quantity pretty
 much of time. They grow much coconuts
 when vintage appears and that cannot be
 very often. There is an easy trail from
 Black Beach to this location.

On the other side of the island as the home.
 In the area Banner Wagner (Madame
 Bozquer) lives with Philpott &
 Sorensen (Sorensen leaves to Germany with

to be named) the the hitherto & his wife
his 10 year old son & a 12 year old
only boy. It is reported that these
places are very improved in Ritten
the hitherto have a better water supply
and apparently have more regard for the
fitness of things in making them home.
As we may expect these people who
have left civilization because the
food is unenjoyable have much dis-
agreement among themselves.

Since these people with the possible
exception of the hitherto look very old &
withered for their age. It is not a very
good advertisement [for the place]
these people may be ^{more} ^{some} ^{than} the rest
but it is surely a little ^{more} ^{than} ^{the} ^{rest}
unquestioned to live in such a wild place
except when there are myriads of tropical
insects that feed a little ^{obnoxious} ^{with}
a much more abundant living, deliver
us from such rarity.

The beaches are easy of access and there
are several good collecting spots. A canoe
going down from the surface a few hun-
dred yards from the beach at P. O. Bay
reached down to the water & apparently
connect with the sea. There are remains
of little shells still present. but the

Brin kept over
40. ^{which}
Ritter has the diff.
+ handles the diff.
took off 3.1 given
by the Barnes

Black Bull fell over
the Barnes diff.

seems to be no galapagos now at the
island. Considerable dredging has been done
in the neighborhood & algae appeared
in greater quantity & abundance than at any other
place in the islands. *Antaresia* & other
demon were quite plentiful. Mollusks were
somewhat numerous but not of great
variety. By hand collecting was fairly
but there were some fine aldymanians
& crabs. Sea turtles & sea lions were
present but not in much abundance
by far. *iguana*. The small birds
fly caught finches, warblers &c were
plentiful in the brush here & elsewhere.

- Jan. 17. A.T. 72° E 79° at 4 p.m. E 75° W.T. 70-72°
Clear or partly cloudy - smooth
Jan. 18. A.T. 72° E 84° at 4 p.m. E 74° W.T. 70-72
Partly cloudy. Under smooth
Jan. 19. A.T. 74. 12 p.m. 76 W.T. 70-72.
Clear or partly cloudy. Under smooth.
at anchor in either Black Bull anchorage
or P.O. Bay. Jan. 16-20.
Jan. 20. A.T. 70-78 at 4 p.m. E 74° W.T. 72-74.
Locally pea smooth under.

Left anchorage at 5.25 a.m. & anchored
in Acad. Bay of Chedabuti, Santa Cruz
Island. 7.57 a.m. Chedabuti is
29 miles directly north of Charles Id.
It is the second largest of the Galapagos
Islands, somewhat rectangular, 23 miles from

E-W + 28 ft N-S. apart from a narrow
 northern projection. 5 miles long & 1/2
 in northernward towards South Seymour Id.
 It is but an elevation near the center
 2296 feet high. The muller are
 not very numerous. The slope at first
 is more rapid, flattening out on all sides
 towards the sea, with very little sandy
 beach anywhere. The larger portions of
 the island are arid of the regular
 Galapagos type with extensive cactus
 patches but on the slopes part of the
 slope although not reaching the summit
 there is much greener vegetation. It
 is in this belt that a certain amount
 of cultivation is carried. This is said
 to be kept moist by the clouds that hang
 over it much of the time but this peak
 as well as every other one in the Galapagos
 was clear when we were in the vicinity.
 This island where the Galapagos have
 been most abundant and are still
 although the numbers have been greatly
 reduced. No longer are seen as
 of yore, seen not by day.

There is good anchorage in Acad Bay &
 in the inner part of the harbor good
 shelter for small boats, a further ex-
 tension forms a lagoon but the lagoon
 is very shallow at low tide, several

inhabitants
 beside of the island live near the shore of the
 bay, among the m & m horn hills
 & m & m. Roads. Here too there are remain
 of much machinery, little of it now in
 repair. as the time they had no good
 drinking water but they expected to have
 when the winter rain came. a good
 many fish are caught & there appeared
 in various stages of drying the
 support of green bananas & the [to gulls]

marine iguanas ~~live~~ scarce
 but there were numerous small birds
 every where near shore. A young gull
 6 days old was of some interest, with
 its feathers still far from being dried
 over. Considerable trading was carried
 on for galapagos & galapagos feet.

The shore collecting was not very good
 as there was no really low tide. Shelling
 at various locations near the entrance
 of the bay procured an abundance of
 of Balgus but comparatively little of
 animal form.

Jan. 21.

A.T. 73-78 at 4 & 740 W.T. 72-74.
 Cloud with showers - sea smooth.
 Left N. Acad. Bay at 6.38 a.m. Passed
 Barnight (Santa Fe. id. at 8 a.m.)
 0° 59' S, 90° 04' W. 900 feet high.
 Anchored at Stephens Bay Chatham Id.

1907 a.m. distance 44 miles. Alt 3329 ft.
 Chatham (San Cristobal Id. lies just
 north of 1° S. & extends from 89° 17' - 89° 38' W.
 It lies in a north easterly north westerly
 direction, 23 miles in greatest length &
 19 in greatest breadth (nearly rectangular).
 The highest peaks 2490 ft & 1927 feet
 are near the western end, but there are
 several other volcanoes of no considerable
 height, making the island descent rather
 abruptly toward the sea. There is a
 large supply toward the summit of the island
 of the vegetation is richer than on the
 other islands, more clouds with rain &
 only at intervals during the day were the
 summits visible on the shore of Cook Bay
 adjacent to Stephen Bay on the north coast
 of the island. There is a small settlement
 which several members of the Nelson party
 visited. Here there is a wharf. A road
 leads up to Progress a town of no size
 near the summit where there is a consider-
 able area of cultivation. Various
 estimates from 200-700 are given of the
 population. The chief Equadorian official
 resided at Chatham Id. There again
 exchange was made for turtles, skins etc.
 The trading gave fair results. It was
 fair both as to the chance, but near the

was loaded with rocky boulders, with large
Gorgonids growing on them.

Jan. 22/34 Air temp. 74° - 86° at 4 pm. to 75° W.T. 78°
Cloudy & foggy in sea during the morning
later mottled. Sept. Seppens Bay anch.

6.12 am. arrived at South Seymour (Bay
on west side of id) 10.28. Dist. 62 mi. Total 3391.
The two Seymour Ids. South on north. an exten-
sive of the northern project of dredge-fishing
refracted by this island & for each other
by narrow channels. They are low &
flat. Strong tide runs north of S. Seymour
flap the rocks quite conspicuous &
difficult for landing are seen to the
westward. South Seymour id. is the
line of long sand dunes, bearing
some resemblance to the main, require
but with difference, mostly noticeable
their reddish brown color, they are very wet
with the lava rock when they are lying in the
shade they are not readily disturbed &
one approach could readily be obtained
but when they are the nation, they could
show a fine burst of speed. On a previous
trip of the Belgica the several of these low
islands that were apparently were really
shaded on S. Seymour were later to north
Seymour & apparently they are doing well
in this new abode.

The entrance to the channels between

The slide proved good dredging but unfortunately the sea was too rough. Some were attempted well in the bay in shallow water & some good catches of *edwardsi* & *notula* were obtained.

Jan 23/34 A.T. 75 to 86° at 4 p.m. E 74° W.T. 74-76°
 Palt Jody but high (ab) hies. Sea north
 Sept 8. 6.25 a.m. and 12 a.m. (San Salvador)
 in Bahia Bay between Jones Id & Bart.
 Jones Id. Jones Id lies 10 miles
 north west of Id defutigable. It lies
 nearly east & west with the greatest
 length 20 miles & breadth 12 miles. It
 is therefore much the same size as Chatham
 Id. It has a high peak 2700 feet in
 the center of the id but the cones of con-
 siderable made is appears more rugged
 than is defutigable particularly on the
 northern slope. To the north east the slope
 is more gradual & there is a considerable
 area of low alluvial near the shore.
 The western slope in general is wooded
 & at this time is quite green. The
 eastern & northern slopes are much more
 arid. The basal rock is of rough lava
 of the old type but over this in places is
 what appears to be three distinct layers of
 lava flows, as far as the color is
 reddish brown, somewhat like the basal
 lava, but this is lighter green & the third

is almost black. These give an appearance almost a distinctive as the typical volcanic features of Albemarle. There is no alluvium with the rest of the present time but at an old mine very worked near the shore of Jones Bay on the west side of the id. Ball's Island is a very picturesque little id. near the northeast point of Jones Id. separated from it by a narrow channel. The larger eastern portion reaches a height of 340 feet as a volcanic cone part of the base of which toward the water has disappeared, the numerous small cones & craters give it the appearance of a miniature of the farther end of Albemarle. Many of the small craters bordering the gulches & basins of volcanic ash is there. Looking as things they have been recently used as fire places. The western portion is lower but towers to Silver Bay side a single ^{red} portion is broken off clear for the summit of probably was 50 or 60 feet. The two portions are joined by a neck of land bordered by a sand beach on each side, the north beach backed by sand dunes. The most of the center of it is occupied by a mangrove lagoon. Marine iguanas had seen their appearance

The roach
+ water are
chemical action?
was at night
of flamingo lagoons

at the beach in small numbers. Sarge
chain of reefs $\frac{1}{2}$ mile and 18-20 miles
long were seen in the bay the only place where
such large ones were seen. The dredge gave
a fair supply of good material.

Jan. 24.

A.T. 74-81 at 4.15 75° W.T. 76-79°

Cloudy all day sea smooth.

Left anchorage at 6.05 a.m. Passed around
the north end of James Id. & anchored in
James Bay on the west side of the Id. at
8.15 a.m. Total dist. 3439 miles. In
the shore the most interesting feature was
the flocks of flamingos around the lagoons
near shore. The dredge at the south end
of the channel bet. Albay Id. & James
gave much good material.

Jan. 25.

A.T. 75-82 at 12.15 74° W.T. 76-78°

Brought all day ~~with~~ late afternoon sea smooth.

Left anchorage at 6.20 a.m. & anchored in
Cantuyo Bay, Albermar Id. at 8.20 a.m.

Total dist. 3460 miles. The dredge in the
morning included banks of fine
white rocks & in the afternoon drew to shore.
When the bottom was smooth enough to dredge
the bottom was under mud. & the material
was scarce. Echinoderms were scarcely
well represented. White Rock itself is
somewhat interesting as it is not by itself
about 5 miles from the anchorage. It is
not of great height but is almost

particularly to the northward on a reef
probably only partly covered on inside
It would present considerable difficulty
in landing. There is no ground on the
rock north to make approach on the lee
side unpleasant. The birds were
mainly *Felices*, partly terns & shearwaters
at the shore. Some sea lions were
swimming about in the surf along a ledge
of rock. The shore at the head of the
bay is not long & a cove on account
of the continuing mangrove houses
extend for some distance.
During the morning a man was harpooned
and brought to the ship. a rather difficult
task taking about 4 1/2 hours. He accomplished
it was 14 feet across the wings 15 feet
thick. Several remoras were hanging
on the gills & one was found in the stomach
but not at all digested. It possibly
has not swallowed for food [It is
fully done when broken in ^{to}] The spiral
valves are particularly extensive consisting
of 42 turns

Jan. 26 A.T. 72° - 85° at 4 p.m. to 74° W.T. 76° - 78°.
Daisy high but partly cloudy; sea smooth.
Left anchorage at 6:10 a.m. for Charles Id.
Saw to for 8.51 - 12.30 to give line for
dredging in deep water 65 fms. with

There is a large
fracture along
the

particularly good results, the best
the Galapagos islands. A wind fish
the only one seen among the splashed jumped
out of the water twice. Several small birds
several birds followed the ship in
motion. The only time that this was
noticed. Although the sea was very
rough. Arrived in P.O.
Bay at 2:14 p.m. Remained in the night.
In hotel at Charles St. and moved into
in P.O. Bay or Black Beach. and stayed
until Jan 31.

The dredging & shore collecting were
made of the same type as the previous
visit here. attempts were made to
dredge for deeper water but the sand
given in the chart was so coarse & the
tidal currents were so variable that
these attempts met with little success.
The small amount of material that
was obtained indicated that it would
be worth while dredging these conditions
to find suitable time for getting more
comprehensive results.

Jan. 27. A.T. 72° E 78° at 12 m. S 72° W. T. 76-77.
Most of day bright, but always some
clouds. Calm sea smooth.

Jan. 28. A.T. 72° E 82° at 12 m. S 74° W. T. 76.
Cloudy smooth.

Schoner tomorrow for Galapagos

Capt. Huller anchored in P.O. Bay. Brought
the Capt. Huller was Ericson's ship. He
knew a new type of compass and made
four sails + a young lad as cook. The
left Oahu Oct. 18, 1933 for a high
cruise around the world.

Jan 29. A.T. 72°-88° at 12h. to 75° W.T. 76-77°
Rain in the forenoon. Brighter in the after-
noon. sea smooth.

Jan 30. A.T. 72-84° at 12h. to 74° W.T. 76°
Partly cloudy smooth.
Yacht Stella Polaris anchored in P.O.
Bay. from 3pm. to 7.10pm. went away
to collect. The Galapagos morning pictures
were shown on board. The yacht is
450 feet, 6000 tons net. Only 80
passengers on an excursion around
the world. She left for Tokyo and
the Marquesas.

Jan 31. A.T. 72 to 74 at 8 am. to 74° W.T. 76-78°
Partly cloudy smooth. Left Anchorage
at 3.37 am. to go to Gardner Bay Is.
boarded + Gardner Id. Anchored at
8.13 am. Total dist. 3612 miles.
boarded Gardner Id. (Eschscholtz Is. the most south
east of the group. It is 1°25'S 89°41'W.
It is elliptical in shape - the long axis
running east to west. 8 miles long. 3 miles
wide. It has no high volcanoes, the

has this
Block
Island.

Height being 640 ft. The slope to Gardner
 Bay is gradual. Most of the shore is
 rocky but there is a long sandy beach
 facing Gardner Bay at the time of the
 visit the vegetation was greener than
 most of the other islands. Marine iguanas
 were noticed here and an albatross
 observed by the shore party. No
 sharks or dolphins were observed.
 In Gardner Bay several Eumeces
 and Chelonia sp. were seen on the
 Gardner Bay shore at this time. They
 feed goats & goats feed on the
 goat manure & the fish for fishing.
 Gardner Id. is a small id. north
 east of the northern point of Good Id.
 It is separated by a narrow channel
 with deep enough water for passage. It
 has a large rock stands up at the water
 entrance. The island itself is steep &
 rocky on its western side going up to 5/60
 feet but the beach to the north east is low.
 The dunes in Gardner Bay gave very good
 results, the species being quite different
 in some cases from those of the other parts
 of the Galapagos. I collected in Gardner
 Bay good.

Feb. 1. Sun. Left 72° E 81° at 12m. 675° W. T. 77-80.
 Clear in morning, partly cloudy later. South
 sea. Left Gardner Bay at 6.08. 9.45 pm

#1

Guayaquil stopped for #1 13
 in $1^{\circ}28'S$ $89^{\circ}11'W$. for water sample.

#2

T. 220 f. 9.95° 150 f. 12.9° 75 f. 14.35° 25 f.
 17.25° 1 f. 25° and for #2 5.18 to 6.10 p.m.
 in $1^{\circ}45'S$ $87^{\circ}46'W$. Depth. 270 f. 8.8° .
 150 f. 12.8° 75 f. 13.9° 25 f. 15.35° 1 f. 24.6° .

Feb. 2.

A.T. 75° to 82° at 12 m. to 76° W.T. 76° - 80° .
 Overcast in morning, clearing later in the day.
 Sea north. Stopped for water sample.

#3

in $2^{\circ}09'S$ $86^{\circ}07'W$. Depth. 270 f. 8.9° 150 f.
 12.3° 75 f. 14.0° 25 f. 14.8° 1 f. 24.2° .

#4

Then. 11.00 to 11.48 am. in $2^{\circ}22'S$, $84^{\circ}36'W$.
 Temp. 270 f. 8.73° 150 f. 12.25° 75 f. 13.8° 25 f. 14.85°
 1 f. 25.6° .

Feb. 3.

A.T. 77° to 83° at 12 m. W.T. 80° - 85° .
 Cloudy with rain in the evening. The mountain
 almost entirely hid by low clouds. Sea north.
 Santa Clara Light was visible in the morning
 at 9.05 it was $4\frac{1}{2}$ miles off. Started
 up the Guayas river with Puma island
 to port at 11.19. So off Puma village
 at 1.19 for Puerto. Became aboard at 2.18.
 Arrived at Guayaquil at 5.10 p.m.
 $2^{\circ}12'S$ $79^{\circ}50'W$.

The shores of the river presented every
 different appearance from anything in the
 Galapagos. all the day the rich green
 vegetation was most pleasing. There is
 not much cultivation along the river & what

there is generally no irrigation. There is not much cultivation until near Guayaquil. Mangroves & other trees with epiphytic plants appeared in quantity especially in the lower reaches of the river. The latter trees were scattered & many of them use of the land. Leafy wood, mangro.

Guayaquil is quite a typical tropical city of about 100,000 inhabitants with a few points of interest. The country here is flat but a couple of hills on the upper side of the town give some variety to the landscape. A long row of cocoanuts on the opposite side of the river gives a tropical appearance but the trees do not seem to thrive in Guayaquil. It was the rainy season - just past the flowers in the parks were in bloom. The mountains were hid from view for most of the day but as we were just about sunset the clouds cleared away to the westward & gave quite a ^{good} view of three ranges of hills in succession. Chiriqui is in sight in the distance but we were not bothered with a view of it. In the city itself the three markets evoked the greatest interest on account of the variety in the people there as well as in the products set up for sale.

As some animals, monkeys, snakes & turtles in the main were purchased by the

ship, most of the animals to be found in the city were gone at one time or other. Lampara hats were the high lights of the purchases here though ponchos made a good second. Balsawood attracted some attention. The tide comes up the river very strongly & for a large part of the day there is a rapid current either one way or the other. There is much drift going backward and forward, regular floods of water hyacinth & other plants that navigation across the river is quite a serious matter. Used the current is made for transportation purposes. Large rafts of logs, boats & canoes of various kinds with loads within in tow. can make good time with the current. The river is shallow at low tide there is not much water for large ships but the Grace Line boats & the large fruit boats go up to Guayaquil 40 miles for the area.

Det.

- overcast with rain in morning and the remainder of the day.
- Det. 4. A.T. 75° to 82° at 12m. C. 76° W.T. 80-82°
Showers in the morning. Clearing during the day.
- Det. 5. Air temp. 75° to 82° at 12m. C. 76° W.T. 80-82°
- Det. 6. A.T. 73° to 84° at 12m. C. 74° W.T. 80°
Rain in the morning. Only a partial shower all day but brighter than previous days.

Feb. 6.
Contd

In the evening the Pelena Assembly gave a musical concert followed by a brief picture of the Galapagos trip in the Rocheforte College Hall. That was many times too small to hold the crowd that wished to attend. A sheer shortage of space during the evening made a little diversion for the night. Had to stay in the lobby. Much information about the city & the country was obtained from Mr. & Mrs. Young, Messrs. Reed (father & son) Mr. Peet the British consul & several others.

Feb. 7

W.T. 73° to 84° at 12m. 76° W.T. 80 to 86°
Cloudy but clearing somewhat in the late afternoon. Anchored at Guayaquil at 10.29 a.m. The visibility was very good. The major portion of the Peruvian coast was readily visible to the mouth of the Guayas. A sketch could not be made of the ~~coast~~ ^{coast} in much detail.

Arrived Puna to drop the pilot at 1.24 p.m. I continued south on track 3° 18' S. at about 4 p.m. off Santa Clara Sv. at 4.45 p.m. Stopped for water sample 6.36-7.15 p.m. 3° 12' S 80° 39' W. T. 35 f. 14.5% 25 f. 14.8° 1 f. 26.2°.

#6

8.11-8.38 p.m. 3° 08' S 80° 49' W. T. 35 f. 15.9° 25 fms. 15.63° 1 f. 25.9°.

#7

#8

9.40-10.33 p.m. 3° 03' S 81° 01' W. T. 270 f. 9.15° 150 f. 13.3° 75 f. 13.8° 25 f. 15.5° 1 f. 25.9°.

#9

11-33-12.00 mid night $2^{\circ}59'S$ $81^{\circ}12'W$. T. 27.0 f 9.5°
 15.0 f. 13.1° 75 f. 13.7° 25 f. 15.42° 1 f. 25.5°
 Squid plentiful when the nets & sample
 were obtained. Squid small as the
 largest [4 line see] probably 14 or 15
 in long.

Feb. 8

A.T. 78° to 84° at 12 m. E 74° W.T. 80-84°
 Cloudy in morning, clearing in afternoon
 clear at night slight swell
 Arose to sea 2.00 - 3.01 a.m. She pro-
 ceeded to Santa Elena Bay. anchored
 off La Libertad at 9.05 a.m. Still
 dist. 4452 miles. The village of Salinas
 lies between La Libertad & the Pt. (S.E.)
 and Patate River, the shipping port for the
 oil fields of Angora a short distance
 northward. She dropped in the bay to the
 northward of the anchorage during the
 forenoon, the whole day & early in
 the evening a trip to Angora formed a
 diversion. It is 10 miles from Patate River
 but a small oil engine pulled the
 single passenger car over a [rugged] narrow
 gauge road in melting mud for an
 hour & a half. The musical concert
 and the motion pictures were given in the club
 hall. A short return made the boat
 quite late in getting aboard.
 There are almost everywhere where there
 was contact with people there was an
 more with mutual acquaintance.

The area around La Libertad and Acahuah is much of a desert but during the rainy season the mud roads become impassable for motor cars.

Feb. 9. A.T. 74° to 81° at 12m. to 76° W.T. 80° to 82° . Clear in the morning, partly cloudy the remainder of the day. Rain in the eve. Sea smooth. Hedged a short distance north of the point (S. Elena) in rocky bottom, good the best results of the trip. *Hydrobia ulayanensis*, *Onchidium*, *echinodermata*, and others all were abundant.

Anchored at 1.51 p.m. Passed Salango Id. 4.33. Anchored off La Platera Id. at 6.17 p.m. Total distance 4511 miles.

La Platera Id. $1^{\circ}16'S$ $81^{\circ}05'W$. is $3\frac{1}{2}$ miles long N.W.-S.E. & $1\frac{1}{4}$ miles wide at widest. It reaches a height of 615 feet & is shaped like a shoe. The shores are precipitous although there is a ~~slight~~ ^{slight} ~~gentle~~ ^{gentle} grade in a range that passes down to a beach on the eastern shore. There is no population. Much of it is arid but there is much vegetation & a very great number of goats. There are some cattle as well. The island is 14 miles from the mainland.

Feb. 10. A.T. 76° - 81° at 12m. to 74° W.T. 81° to 83° . Rain in morning overcast all day. Sea smooth. Hedged in the morning with but moderate success. This part begins

At the muddy coast. Anchored at 2.03 p.m.
 to go over to Cape Suez to take a line
 of bottom samples, but the sample
 did not look very satisfactory as the
 mud was evidently too soft to dig in.
 Cr. $1^{\circ}02'30''S$. $80^{\circ}56'30''W$ in 21 fms. 15.55°
 at 18 f. 27.8° at 1 f. 15.48° at 30 f.
 at $1^{\circ}02'30''S$. $80^{\circ}58'5''W$ in 35 fms. 27.5° at 1 f.

Tried also at $1^{\circ}02'10''S$. $80^{\circ}57'50''W$ in
 75 f. and at $1^{\circ}02'00''S$. $80^{\circ}59'20''W$ in
 105 f. without success. Moved on to
 Mantá Bay to anchor at 6.23 p.m.
 The town of Mantá was readily observed
 for the anchorage. It appeared to be a pleasant
 place with favorable situation. At the
 port for Monte Christi the village of
 Mula had a ship are made the best
 Panama route. The mountain itself
 shows up clearly (1420 feet).

Oct. 11. A.T. 77° to 84° at 12 h. to 75° W.T. $82-98^{\circ}$
 Rain in the morning, we cast a cloudy day.
 Sea smooth with a little swell in the morning.
 Anchored at 12.10 a.m. At anchor
 San Francisco Bay 7.48 a.m. ($0^{\circ}40'N$, $80^{\circ}07'W$)
 Cape San Francisco is the southern
 extreme bluff + the most notable
 of the western project point in Ecuador.
 San Francisco Bay lies to the south
 of the cape and a narrow shallow

portion runs farther inland. At the head of it is an extensive beach with a village behind it, beside a mangrove. The beach runs down to is pretty well shut off from the bay at low tide by a sand bar. The village is a typical tropical village but is cleaner & neater than most. Several of the inhabitants look much like Polynesians. I observed the type of fiddle and associated with the north Pacific.

In the forest there is now indication of the approach of the tropical rain forest. These are more pronouncedly so further north in Columbia.

Most of the bay had muddy bottom or was practically the only good dredging could be obtained over the reef near the rocky point in shallow water [north of bay proper]. This was difficult but much good material was obtained. Set anchor at 4.51 p.m. Took a series of bottom samples.

#12

At anchorage. 4.29-4.39 p.m. L 5f.

at 4f = 18.4° L 15f. 27.4°

#13

5.02-5.21. near anchorage L 30f.

30f. 14.6 15f. 26.98°

#14

5.36-5.57 0° 38' 50" N. 80° 13' 30" W 4.50f.

at 48f = 14.38° 15f. 27.26°

#15

6.10-6.33 0° 39' 20" N. 80° 15' 30" W 60f.

58f = 14.30 25f. = 14.46. 15f. = 26.2°

[In order to make next stop at perfect time
had not time for any more samples.
Turned northward leaving Ecuador behind

Oct. 12, Air T. 75-89 at dawn. \pm 78° W.T. 80-82°
Overcast all day. Sea smooth.
Passed around the west & north sides of
Orizaba Id. (Columbia) and here to the
the east side at 8.58 am. (Hatteras Bay)
Gorgona Id. 2° 58' N. 78° 12' W. is 24 miles
from the main land, the channel being
all approximately shallow. It is 5 miles
long from N to S with greatest width of 1 1/2
miles. It is 3 peaks the center one the
highest being 1,296 feet. It is well within
the tropical rain forest area and is
said to resemble Crook Id. There
is plenty of rainfall and a waterfall
was seen for the first time on the trip.
There are some inhabitants on the
east & south of the id. Cocoanuts
being the chief product.

Gorgonilla a small island about a
quarter of a mile from the northern tip of
Gorgona is a picturesque little id. with
precipitous cone except for a palm laden
beach near the north west point. La Roca
a sail like rock about 1 1/2 miles south
of Gorgonilla is a conspicuous land
mark. The day was satisfactory only

when it was done near the reef close in & then there was much danger of being hung up. One made but a short distance from the rocky pt. at the N.E. of the id. in 150 ft. brought up so much sticky mud [and I should add + sandy gravel] and stones that it took a long time to get rid of it. [Had to lean down & scoop it up out of net with hand myself lying down & dredging flat from full length while net was hoisted just to its edge over which we could not lift it by hand or with ropes however hard we tried.] In the shallow water to the south west of the island there was much red. Started up again at 4.10 p.m. going around to the south west of the island to pick up the whale boat that had been dredging. 4.30 p.m. Say to until 8.05 p.m. Sailed for Cape Corrientes.

Feb. 13. A.T. 76-86° at 12m. E 74° W.T. 81 E 74°. Overcast cloudy all day. Rain squalls in the evening near north.
2.46 a.m. Starboard engine stopped cracks in chamber. Repaired during day [?]
9.10 a.m. anchored in Calita Bay near Cape Corrientes 5° 28' N. 77° 29' W.
Cape Corrientes occupies a similar position relative to a rocky bluff as Cape

Cape San Francisco does not Calita Bay
is placed relative to the Cape as San
Francisco Bay is. It is even muddier
than S.F. Bay & the muddy bottom goes
away out to sea. In consequence
it is the poorest marine collecting area
encountered on the trip [by dredging].
It is the center of the tropical rain
forest area & hence the jungle here
reaches the maximum of antipa-
thality. It is rich in ferns, orchids,
lianas & various birds, large
trees (mahogany & gilded alders,
spiny & bushy shrubs, vines
creepers etc.

Feb. 14. Air temp 73-86 at 3 p.m. to 79° W.T. 78-80
Overcast & cloudy nearly all day Rain
squalls Sea smooth.

Anchored at 5:35 a.m.

Started to take water samples

#16 535-542 5°28'15"N. 76°30'W. in 17 fms.
T. 16 f. = 15.47° 1 f. 24.1°

#17 601-636. 5°27'30"N. 76°32'30"W. 530 f.
T. 36 f. 14.85° 1 f. 24.68°

#18 646-657- 5°27'40"N. 77°34'10"W. 557 f.
T. at 55 f. 14.6° 25 f. 15.16° 1 f. 24.40°

#19 705-732 - 5°29'N. 77°36'W in 118 f.
T. 115 f. 13.3° 75 f. 13.6° 25 f. 15.1° 1 f. 24.25°

7:37. Left for Pat Utia, anchored at 10:12
a.m. Pat Utia 6°00'N. 77°20'W.

Feb. 14

Port of Uthia, Columbia. $6^{\circ}00'N$ $77^{\circ}20'W$.
 Anchored at 10.12 am. The most easterly
 part of the cruise is shaped like a miniature
 fjord extending inland in a northerly direct
 five miles with an entrance about 1 mile
 wide. It provides a perfect anchorage
 well protected in all weather. The outlook
 is very picturesque as the point of land
 separating the bay from the open sea ends
 in a cleft of islands with narrow
 passes between. The shores white quartz
 steeps are not so abrupt as in some other
 localities visited e.g. Gorgona Id. The
 hills run in to each other somewhat but
 none of them very high. The vegetation is
 almost as dense as at Cape Corrientes.
 The dredging here off into the narrow passage
 the outside gave very good results. The bay
 itself and the extension of it into the
 open sea had muddy bottoms. Shore collecting
 was fair and a mass of coral heads in
 shallow water added to the variety of
 specimens. Here as elsewhere along
 the Columbian coast few algae were
 in evidence. Sea snakes - yellow &
 black - that appear all along the coast
 were especially abundant here. There
 seems to be but one species. Two different
 types of colonial sponges were much in
 evidence. Pelicans have been seen

most birds
seen here
5000
more in
afternoon
until 6 pm
B.

evidence everywhere here appeared in large flocks flying northward at intervals all day [I should recall late afternoon]. One flock had 136 and another 129 birds. There were several habitations around the shore of the bay. It was stated that there are no mosquitoes here and hence no malaria. The people looked healthy and even the little pigs were in good condition.

Oct. 15 A.T. 73° to 90° at 12 m. to 75° W.T. $79-77^{\circ}$. Clear & bright in the morning. Overcast in the afternoon with rain during the night. Sea smooth. Anchored for Balboa at 4.49 p.m.

Oct. 16 A.T. $67-80^{\circ}$ at 6 pm. to 73° W.T. $74-68^{\circ}$. Fine and clear nearly all day. Partly cloudy in the afternoon. Sea a little choppy in the morning. Smooth later. Passed the Perlas Ids. to the eastward early in the morning. Taloga and Talogaquilla to Port about 9.30. Took on pilot at 9.58. Moved at oil dock at Balboa at 10.40 am. Total distance 5274 miles.

Balboa $8^{\circ}53' N. 79^{\circ}33' W.$ is a small town pleasantly situated at the Pacific entrance to the Panama canal. The inhabitants are principally government employees and their families and it is for them that nearly all the business is done.

Some
near
the
bay
number
74343

Most of these government families live at
Angos a short distance inland. Balboa
in the canal zone is practically continuous
with the city of Panama. quite a pre-
tentious tropical city where most of
the business is done by the Panamanians
although several other nationalities are
represented by concessionaires for transpor-
tation companies etc. It is well located
on the sea shore and is as clean as
is usual with tropical cities, much
more so than it was formerly. A little
further south eastward is Antigua (old
Panama) or rather the ruins of it as
the town was destroyed by hurricane.
A train trip to Frijoles and a laboratory
from Frijoles to Barro Colorado and
thence out to the Canal zone laboratory
and natural history reserve. Barro
Colorado was formed as an island
when the building of the Gatun dam
made Gatun Lake. It is somewhat
irregular in outline and has an area
of 25 square miles. Its vegetation is
somewhat of the tropical jungle type but
it is not very dense & may easily be
penetrated in almost every part.
The laboratory is pleasantly situated
on a terrace overlooking the lake
(198 steps from the landing at the station).

affording a good location for work but is practically devoid of equipment. It would appear that the superabundance of little brown ticks and less numerous red bugs would detract from the comfort of a room at the laboratory. The James Zelet who is in charge of the laboratory resides at Balboa.

A really good idea of the canal the canal zone & the neighboring country is obtained by an air trip (Columbia Airways) from Balboa to Colon. The distance is less than 45 miles & is covered in 30 minutes (25 minutes from water to water). The flight is made at quite a low altitude so it is possible to see all the details of the canal. The locks cut, Gatun dam, Gatun Lake, the boats going through, the habitation scattered in villages, the roads & trails - the railway and finally one third of the way to the Pacific Ocean & the Caribbean Sea was visible. The Balboa entrance as seen from the air is much the more striking with the Gulf of Panama dotted with islands narrowing gradually to form the approach. The coast line on the Colon side is decidedly convex and the harbor fenced by a heptagonal with an opening towards the center for the

photo passage. Nothing else is in view but the wide open Caribbean Sea.

Colum itself is a nice clean port town with several fine buildings on the Christ the King side. Cristobal is the actual port. The main entrance to the Bonaire is in port on the day. Colum was visited on a survey of the difference of culture on the two sides of the equator. Bonaire has an extensive change of tide of about 25 ft. while Colum has but 2 or 3 feet.

Feb. 17. A.T. 72° to 89° at 122.579. W.T. 68° - 66°
Clear all day with but few clouds. The museum of the Velez exhibits the native pictures were given at the club house in Bonaire in the afternoon.

Feb. 18. A.T. 68 - 97° at 10 a.m. to 69° W.T. 67° to 68°
Clear most of the day but partly cloudy at times.

Feb. 19. A.T. 69 - 90° at 4 p.m. to 71° W.T. 66 to 72°
Clear in morning, hazy and partly cloudy in afternoon, sea smooth.

10.47 a.m. Left Bonaire 11.18^{am} dropped pilot. Arr. to 4.15 to 5.54 p.m. 8.13 p.m. passed Cape Mula.

Feb. 20. A.T. 78 - 99° at 124.573 W.T. 81 - 82°
Clear practically all day, slight swell.
7 a.m. anchored to the eastward of Jicarara Id. just north of the passage.
Set Jicarara Jicarara Id. ($7^{\circ}13'N$, $81^{\circ}47'W$).
T.D. 5492 miles Jicarara Id. in morning

the shape of an angled triangle
 $3\frac{3}{4}$ miles long from north to south & nearly
 this width at the north end, tapering to a point
 at the south end. These conditions are
 already noticeable here. as the vegetation
 which is not so green does not so
 completely cover the island. The higher
 point is 830 feet.

Jicaguilla is much smaller, $1\frac{1}{4}$
 miles long and less than half that in
 width, with a prominence 250 feet high
 at each end. The north end next
 to the passage (which is narrowed
 considerably by ~~reefs~~) has a sandy
 beach and a very precipitous shore
 by the south end is largely bare
 rock, arising almost perpendicular
 showing light grey color. There are
 some large caves & other interests.
 There are groves of palm trees in
 several places along the shore.

Shore collecting was rather disappointing
 the dredging was not very good at the
 eastern entrance of the passage
 but was very satisfactory at the western
 entrance. A south east wind
 made the sea choppy. Anchored at
 3.06 p.m. Anchored in Bahia Honda at
 6.23 p.m. U.S. Government survey boat
 in Bay.

Nov. 21, A.T. $72^{\circ}-89^{\circ}$ at 12° E 79° W. T. $80^{\circ}-82^{\circ}$
 Breeze all day sea north.
 Bahia Honda $7^{\circ}44'N$. $81^{\circ}32'W$ is a rather
 small well sheltered bay with a good
 reef fringing along the front & in the vegetation
 is much the same as in Jicarón Id.
 There are several habitations on the shore
 in some cases grouped into villages.
 The largest village is on the inside
 of the island. As usual the principal
 product is coconuts.

Good dredging was obtained fair
 results. Between head of Pácora
 Id. and some good material near
 the rocky point of the entrance. Coral
 patches were discovered in the lagoon
 the north shore of head of id. Some
 collecting did not provide much
 material.

A 15 foot manta was hauled
 in the bay in head of Pácora Id. & hauled
 to the shore after much prolonged effort.

Nov. 22 A.T. $72^{\circ}-89^{\circ}$ at 12° E 79° W. T. $81^{\circ}-88^{\circ}$
 Breeze but partly cloudy all day sea
 north 12.47^{pm} . Anchored at 3.44^{pm}
 east of Secas Id.

Secas Id. $8^{\circ}N$. $82^{\circ}18'W$. include several
 is. none of them large arranged
 a crescent with the concavity to the

eastward. Sea area well supplied
with green vegetation in the Bahia Honda area
but we could not see any ferns or ^{other} plants.
The shores are rocky but not very
precipitous. Near the mouth half of
the northernmost is a coral patch was
discovered. Just land region we
found a few of the islands. There have
very long tails. The large lizard measures
5 ft 3 in. A tree iguana taken in
at Panama laid several eggs in
subsoil.
Hedging close to the rocky shores gave
good results kept the mud was exposed
partly from shore.

W.T. 83-84°
E 79°

Feb. 23. A.T. 80-73° at 6 a.m. E 96° (to sun) at 8 a.m.
Clear all day sea north.
Anchored at 10.41 a.m. Passed the
Sadrone Ids. at 12.52 p.m. Passed
Cape Bunica (Bandy bet Panama &
Crista Rica) at 3.02 p.m.

Feb. 24 A.T. 78-72° at 11 a.m. E 74° W.T.
Smooth in the evening at sea. Chopped with
an off shore wind at Culcha all after-
noon. Smooth again in the evening.
8.54 a.m. Off Cape Vela. Anchored
Port Culcha 10.50^{a.m.} Distance Seear
Ids to Culcha 325 miles T.O. 5891 mi.
Port Culcha. 10°36'N. 85°41'W. is a

extension is a northwesterly direction from the northern portion of the Gulf of Amalga, Costa Rica. It is a rapid and narrow perhaps of any size but it is subject to a strong north east of strong wind that at certain time of day makes the surface very choppy and unpleasant for small boats. North of the entrance are the North Viadore does I see really a couple of rocks, the outer of which stands up like a large rock is quite characteristic. South of the entrance are the South Viadore consisting of three rocky islands with very little vegetation & some reefs. These separate Amalga from Cruz Bay on the shore of which is quite a settlement with bank & customs offices.

Like the arid appearance, similar to that of the Galapagos, has become definite with little green vegetation and cactus are now holding sway. There are several sandy beaches with broken shells & coral rubble, etc. strewn over them. Where it is rocky the rocks go steeply into the water. The bottom is sandy bottom over the whole bay although the sand may be mixed with mud & covered with green & dead shells. Some coral heads were located near Cape Mala (north of the entrance).

Cape Buena, north of the entrance.) The debris
 brought up material rich in corals &
 mollusks & echinoderms but from which
 little was seen to be plentiful. Some
 of the bivalves at the head of the bay seemed
 to be more agriculturally interesting than
 any other natives seen so far to the north.

Oct. 25. A.T. 74 to 102° at 11 a.m. (i.e. temp. to 75°)
 Clear all day, calm, in the forenoon &
 to day.

Oct. 26. A.T. 71-81° at 4 p.m. to 78-80° at 12 p.m.
 Clear all day & practically no breeze on
 the land. Sea smooth in the morning.
 Considerable swell in the afternoon.
 After passing Cape Elena the off shore
 wind (pupazzo) made the sea in the
 Gulf of Petenaya quite choppy
 but this soon went down.
 At a wh. at 5.54 a.m. Passed Cape
 Elena 5 miles off at 7.53. Just before
 passing the cape passed through a large
 school of porpoises extending far out
 on each side of the ship. They were
 smaller than any other (seen yet) also
 five feet long. Several boats were
 visible in Nicaragua. Mountains
 on the shore of Lake Nicaragua, Mon-
 tana, on Lake Managua and Vieja.
 The highest of these a little south of north
 west. Near Vieja there were smaller

Peaks (volcanoes) active. Chas (8 p.m.)
the ship is off to the Gulf of Fonseca
in which border Nicaragua, Honduras
& San Salvador.

Oct. 27. A.T. 80° to 85° at 10 a to 78° in the
clear but partly cloudy at times. Con-
tinued along the coast of San Salvador until
about 8.30 the boundary between the state
and Guatemala was passed.

The high peaks of Fuego & the high
peaks of Agua (each over 12,000 feet,
the highest in Central America north
of the Pacific) showed up very well
in the early forenoon but later became
entirely obscured by the smoke from
active volcanoes in the neighborhood.
and by clouds. On account of these
clouds during the remainder of the day
none of the mountainous background
was visible but only the mountainous
level shore line & small areas back
of it. The course was near shore
at times in only 10 fms.

San Jose was passed at 11.30 a.m. &
Chimborazo at 4.38 p.m. The boundary
between Guatemala & Mexico at
about 7.30 p.m. (at considerable
swell)

Oct. 28. A.T. $79-73^{\circ}$ at 8 a.m. to 84° at 12 p.m. to
 81° . Partly cloudy all day, Chocoma sea

Feb 28 (contd) The Gulf of Tehuantepec lived up to its reputation and was very dotty. In order to avoid the bad weather course was set rather further shore & much of the swell was thus avoided. It was still dotty.

Along this part of the coast the mountains came pretty close to the coast and add much to the interest of the landscape. It has much the appearance of desert country.

Salina Cruz the terminus of the Tehuantepec Railway was ahead at 10.03 am. It was pretty well in a state of decay. At 10.30 the dotty sea moderated somewhat but it was somewhat uneasy the rest of the day.

Tangula Tangula (Mexico) was reached in the early afternoon, anchored at 2.39 pm. Distance from Culiacan 715 miles. Total distance 6606 miles.

Tangula Tangula Bay $15^{\circ}46'N$ $96^{\circ}06'W$. With the other bays in succession Santa Cruz and Guatulepec are shallow indentations of the coast giving only moderate shelter for only a few miles across the mouth of the three of

Coast line has much the same appearance throughout the whole distance from the Mexican border to Isabel Island. Some stretches of sandy beaches are separated by small groups of large masses of rocks. Back of the beach a series of rolling regular hills, getting higher into mountains further from the shore form the complete landscape. The hills are brown and arid and white at first sight they look rather picturesque than grey mountains, perhaps more so than any coast line seen in the tropics.

Mar. 2. A.T. 78° to 84° at 8 a.m. to 73° .

Cloudy in the morning. Clear later and partly cloudy in the afternoon. Sea light choppy in the late afternoon with gentle swell. Reached White Islands at 12.41 p.m. These islands consisting in the main of three masses of rocks rise abruptly from the sea more than a mile from the nearest shore with deep safe water between. They are most conspicuous, 200 feet high, because they are white with guano from the numerous boobies & terns that almost seem to cover the rocks. There are several tropic birds as well but they are not numerous like the others. From opposite the White Islands the Veler was headed out to sea in about

three miles in order to put over the whole
 hour for dredging in deeper water. The
 gear worked as well as in water up to
 140 fathoms of depth but the bottom
 was muddy & the material obtained was
 mainly fish, but an interesting lobster
 larva was a useful record. In one
 of the hauls many shrimp all of the
 same species were obtained. On
 the mean time the vessel moved on to
 anchor in Petatlan Bay at 1.46 p.m.
 Distance from Tangola 354 miles
 Total distance 6900 miles after
 dredging in deep water. The whole hour
 moved in to the White Thru's & dredging
 was done quite close to the south side of
 the rocks with the result that very rich
 material was obtained. Hydroids were
 particularly abundant but other
 groups were also well represented.
 It has a very good locality for a diving
 zone probably as good as any on the trip.
 Petatlan bay $17^{\circ} 29' N. 101^{\circ} 35' W.$ like
 all the bays on the Mexican main land
 coast supplies a good anchorage and
 is fair weather. It is wide open to the
 north ~~west~~ protected only for the south
 part as a rough bluff *morro de Petatlan*
 projects out for some distance
 in the direction of the White Thru's.

At separate sandy beaches there
to the north east of Cascadia the
surf quite strongly the vegetation is
much of the same type as that around
Jangola Jangola.

Mar. 3. A.T. 71° to 70° at 4 a.m. to 81° at 4 p.m. to 75°

Clear all day until late in the evening.
Sighting in the west during the evening.
Sea smooth with slight swell. 9
The debris all pyroclastic from de Petatlan
near the beach to the eastward, between
the point & the White Triangles & north of
White Triangles produced much material
but not of as much interest as that
of the previous day. Shore collecting
was poor possibly because of the fact
that there is only about 2 feet change
even at spring tide.

Set anchor at 12.50 p.m.

Mar. 4. A.T. 71° to 70° at 4 a.m. to 81° at 4 p.m. to 78°

Clear all day. A little more swell. North west
wind in the evening made it somewhat choppy
for a while. Morning & evening both cooler
enough to add a little clothing. Arrived
at Ahacatita Bay $71^{\circ}16'N$ $104^{\circ}50'W$.
Distance from Petatlan Bay 226 miles T.D. 7186
miles. Ten. Bay is even less protected
to the north west than Petatlan Bay.
Navidad Head projecting directly north
with rocky islets extending as far as

gives good protection for the south east.
A small palm grove just inside Tene-
catita point and a much larger one north
of this a short distance gives a definite
change to the shore, a small village
is situated in the latter grove. A lagoon
opening into the bay is situated near
the shore north west of the grove.

The dredging in the bay is chiefly for 50 fms.
gave sandy bottom and shells but
unfortunately little interesting material
but a couple of hauls close to the shore
side of the rocky islets off Navidad
Head gave a great abundance of material
rich in hydroids and other colonial
life, any previous locality. Shore
collecting was not very profitable
for some time the range known as
Pelatta Bay. Anchored at 5.4 p.m.

March 5. A.T. 72° to 81° at 7 a.m. to 68° .
Clear most of the day. Partly cloudy in the
afternoon. Sea smooth in the morning
choppy in the afternoon due to a north
west wind. Quiet again in the evening.
Quite well. Passed Cape Comete
Jan 12. 27 a.m. Tenz mares were off
to the station during the morning.
Anchored for a label placed for
7.44 a.m. Dist. from Tene catita 185 miles

native
 got about 80 Anguilla
 value for each shark
 Out out of Spaceman
 have for oil drum they
 then of help with
 at the old ruins
 drum

Total distance 7371 miles.
 Crabel Island. $21^{\circ}51'N$. $105^{\circ}53'W$. lies
 $17\frac{3}{4}$ miles from the nearest mainland at
 the entrance to the Gulf of California.
 The main island consists of three
 large half-circle coves. The half to
 ward the water in each case having dis-
 appeared. Just at the base a large
 appearance by the one facing south
 seems to be definitely sand stone. The
 highest point is 280 feet above sea
 level. Vegetation is sparse but is
 quite distinct on the north eastern
 slope where it covers the area quite
 fully. It evidently is a favored
 resort and nesting place for many
 of frigate birds, terns and boobies.
 There are also some native birds.
 Smeeth's fishermen were living on the
 sandy beach facing the south east.
 The small but rocky islets close
 to the north east point of the island
 are conspicuous and there are larger
 rocky islets off the north west
 point of the island. There is said to
 be no water on the island.
 The rocky points in the shallows
 were too rough for satisfactory dredging
 and a short distance off on all sides
 the bottom was sandy with mullifera

in some places, that gave some interesting material but not as extensive as we found on our previous trip. Shore collecting has not been effective. The scarcity of algae along the shore crops for Pandanus occidentalis seems rather remarkable.

Anchored at 11.52 p.m.

Mar. 6.

South Bay to San Benito 25 T. 7984
 San Benito to San Diego 284 8268
 San Diego to L.A. 93 8361

Sept 8

Arrived San Diego 11.15

Sept

7.15 a.m.

Arrived L.A. Boulevard 2.38 p.m.

Docked

at 3 p.m.

3.05 p.m.

100.
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Feb 28. Jangala-Jangala arrived in mid afternoon & put over dredge boat while one party went swimming, a fine beach for that too. The dredging was both hell and sand as marked in chart for most part bet 15 + 20 fms. but sand was too coarse to wash out well & so rather troublesome. Lots of shells but mostly fragments, excellent haul of echinoderms, white indians. Also *Cuthra* a *Leptorhynchus* and of *ophiurans* more than we had gotten the whole season put together. Largely all one species but a few specimens of 2 or 3 other species but much smaller ones. Comparable in abundance to the *ophiurans* were the *leucosids*, large and small, numerous small ones, but only one large *Persephona* or *Randallia* one only or perhaps two little crabs, & lots of small *Portunids*, a few hermits. *Blis* or late in the day in arriving we had to retreat to ship about 5 fms. *Scupper* / but in 20 fms. struck mud but made the same sort of life, all things combined.

May d. 1. Had 7³⁰ breakfast as we could get
 ashore at 8 to get in what low tide we could
 be getting and so, about 9.45. Could well
 have used a much lower tide, by staying
 longer but did not want to delay sailing
 for the white Strains. Got practically
 nothing in shore except shells + echinoderms
 + few crabs + started alagnation till
 we struck coral which Taylor discovered
 while looking for algae. Said it was
 the best place he had "struck in a month".
 The alagnation Taylor got mostly out
 of the tide pools here. Surf was pretty
 bad + we had to go around to the shore
 ward side of the island before we could
 land. Saved about a dozen of the large
 limpets (for what?) Had the 10 to 12
 water tonight at about 11.30 saw a
 bright flaming meteor drop into the sea.
 There are vessels such as this to be spotted
 at night a trace. Smith saw one the
 evening it began to rain. I had the light
 at last they may be the lighted night
 drifting down. Beautiful day + another of the
 clear sunny, at peace with the world moonlight night.

March 2. Arrived off White Thru at about ⁰²167
 lunch time; As you look at the large
 rounded gneiss covered rocks, brilliant white
 in the sun, you are reminded how
 more appropriate the earlier names were.
 Not a day's change after some famous fern
 a few less so. They do look as like a
 group of white antlered fawns on the road.
 With of course a bit of imagination.

The ship set us down, in the lake bar
 about three miles to the westward of the
 Triggs for a try in about 100 fathoms +
 two fathoms in 100-140 gave up shrimp & small
 fish mostly the latter. The shrimp taken
 were about half the total quantity now
 put up with the gulls in 80 fms, all
 the same kind. The bottom was soft
 oozy mud that washed out very readily.
 As it yielded no further variety we
 moved in close to rocks in 20 fms & found
 a rich algaecolous zone literally alive
 with hydroids. We've had a number of
 good hydroid places, but this is the best
 yet. For leucoids the Tangier hauls were

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better I believe. Got also a few *Silthidia* like
here. The tide seems all wrong in the basin
of the tide table, being apparently like Tangle
in its behavior. Well know better this a.m.
The bottom was so rich that the Tross, and
if we might not have an extra half day
dredging, & the Capt. kindly acceded, leaving
at 2 p.m. on the third instead of the evening
and the second as planned, originally. We
shall probably have to stop a day at the Tuesday stop
contemplated at Tenacatita, where we did
the low tide fairly well last year. My line
turtles are doing well the little fellow has
showed considerable growth it seems. He
now weighs.

Mar. 3. We dredged around about the
monro de Pelatan, and though the dredge
chugged like all get out had very little
material in it, but what was there was
very good, Portland Crabs mostly &
some Penaeids each time; comparative
few shells but excellent crabs &
couple of starfish, not many in this but not bad.

Mar. 3, cont'd. Then we put in at land between ¹⁰⁴ ~~171~~
 the ~~mon~~ the White Triangles about half
 way between good much the same kind of
 bottom shelly sand, of which the sand seemed
 to wash out leaving the few shell fragments
 behind, got a reddish large portion
 than along shore that was a speckled kind
 & then at the far end of the white piece
 we got a coarse white shelly sand
 that would not wash out. Had many
 small white yellowish portions projecting
 colored, with dark brown & pinkish markings
 making them quite inconspicuous in the
 shadings & relief of the red-shelly bottom. The
 shell fragments were mostly quite small &
 not over half a dozen long shells in a bucket
 full. Farther along the N side of the
 piece we for coral got but only got
 a small long fragment. The coral end
 had a few small ~~few~~ ^{small} Cyclopes; 2 large
 Cyclopes from the half way and land.
 We left Petatlan Bay where we were anchored
 (White Triangles) at near 11 o'clock for a 18 hr run to
 Tenacatita, Mex.

March 4. Tenacatita Bay, Mexico, a one day
 stop of scarce 12 hrs got it at night after
 six this morning and left again shortly before
 six the same evening. But we had a
 corking stimulating day, fine dredging
 for ^{right after breakfast} before lunch. No ^{before lunch} before lunch,
 good ground and lots of Rhynchoids &
 some Annelids. It made me just as
 happy to get the things for the Thayer as
 for myself, and we did get some good
 Annelids; half a dozen of the ^{very} like cercomis from the east coast that
 lives in a horned bygon house, I can't
 recall what the western analog of it is
 gladius a one of the of Benedict in his
 Rattling Stalked list. Shrimps were
 scarce, as hermit was plentiful, porreaids
 in fair number.

May 10. Go for night of ^{at least} at least
 and ^{at least} at least (I found them), besides I got
 2 or three Sicyonias and an Alpheidae of about
 4 inches long. In the five days ^{at least} at least
 at least for time, were getting north, getting at least.

Mach. 5, At Chabel Id. we arrived about ¹⁹⁶~~175~~
 6 a.m. and went dredging right after breakfast, on usual routine. Most of the
 bottom about Chabel Id. was more or less com-
 position which quite naturally had a portulacoid
 predominated with a sprinkling of tiny Gales.
 Only off the northern end did we strike a
 different sort of bottom, molluscan, but
 not much difference in species though
 different in relative abundance, few
 portulacoid, some Gales, + where different
 lots of hydroids as compared to
 few + several stomatopods where
 we had one or more in the sandy drag.
 We made everything about Chabel Id. station
 except the one collecting, and made some
 seven or eight hauls with the dredge
 in accomplishing it. Just 2 bags of
 algae. Either Bayley, Chabel Id. fair
 in getting them or waiting for them, or else they
 are not just here, in that
 case the environmental conditions are worth investigation.

The mornings, and I suppose the greater part of the nights are definitely colder, shorts are being left off except around the middle of the day and for puttees (dinner in the evening) shirts are making their appearance. Just three out of the bunch left them off this evening. The weather as all things the trip continues beautiful quite quiet, with beautiful moonlight for now, later in the evening than during the past week.

March 6 Sailing I sailed last night
at 12 midnight, we are now at 6.30
perhaps third of the way across the mouth
of the gulf of California headed in a
bee line for Cape St. Lucas. It will
be an all day run and ~~about~~ ^{about} Longman
morning the 7th - well make ~~it~~ ^{Mayaguez Bay} ~~edroo (or)~~
~~St.~~ Over California for more collecting
a place I have not stopped at since
1911, twenty-three years ago! This time
I hope get in dredging for Crustacea
rather than mollusks, as Barth insisted then.

March 7. We reached the latitude of Magellan
 along about day break after running most
 of the night in quite a fog with the whistle
 going. Not much sleep for the long haul
 with our navigation. The entrance to
 the bay opposite which we were along about
 6.30 & 7 o'clock was obscured by fog so
 the Captain would not venture in so we
 went along about 5 or 6 miles to the
 wide open Santa Maria Bay and
 to the northward and as we got there
 the fog had lifted enough for the sun
 to illuminate the headland Bayley
 Point (a most un-Spanish name) which
 makes this bay on the north side.

After breakfast chugging as usual
 L. J. rose and with Sparks at the
 helm and Alec our no. 1. engineer to
 tend the hoisting engine. Close to
 the point we struck a rocky ledge in
 10 fms. and got some good things, both

(100)
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 hydroids algal. The amphipods today were
 more numerous than any of the other crustaceans
 with isopods + hermit crabs, & a few porcupine
 a couple of lucernids (we get one or more
 crustaceans each day) but not G. de
 first day we missed them. The
 hydroids are quite different, the large
 rays from those we met with down on the
 Mexican coast or over in the Galapagos,
 having more a 'Atlantic affinity' than
 Pacific, so it seemed. And was
 it a miserable cold chilly morning. Out
 on the spray & wind? The fog
 still all pretty much around us & the
 blue flannel shirt was scarcely enough
 after we got away from the ship. The last
 haul of the day, & the last station was
 the richest in point of number of specimens
 of the three (station) about a dozen hauls of
 the month. Both quite good & well
 grown in ^{35°} 40 fms. about a mile or a mile and a half
 south of Hough's Pt.

March 8, Left Santa Maria Bay at about ¹¹⁰ 183
 5 a.m. Headed a little farther up the
 coast to ~~Shalve Bay~~ ~~Shalve Bay~~ ~~Shalve Bay~~
~~Shalve Bay~~ Abrejos Bay, & Point, had
 expected to dredge there late in afternoon.
 Our arrival had been planned for about
 4 p.m. but with bad wind & shoals of
 uncertain position it was necessary
 before we got berthed there & then it
 began to get dark / At 4 a.m. on the
 9th of March we got underway for
 Shalve Bay just to the south and
 eastward of Gentle Bay. It is at
 the former that the wonderful clams about
 about which I have heard so much are
 found. Dr. Fraser & I went dredging
 & about every body else went ashore for
 dinner. We reached Shalve Bay after
 noon, & went dredging right after lunch
 Had good luck & got back to the ship at
 2.30. A Randallia & a Platysma, & a number
 of

small Clythreus, one slightly hermit
 no end of amphipods, of which several were
 of good size. Between 2.30 + 3 we lifted
 anchor + headed for South Bay, Cocos Id.
 getting there about 5.30. Very bare & des-
 olate looking. Had plenty of wind, but
 it put up contrary wind because of that
 we could work on the after deck. Here it
 is 10.30 p.m. & we're finished all the
 rating we are going to do tonight &
 these notes are good note till tomorrow
 at 6 a.m.

March 10 In South Bay, Cocos Id.
 Here we dredged along the edge of
 the shelf beds, striking sand once &
 getting our one magnificent Quercid
 about half an inch in diameter with
 red markings, & the rest of the time
 in more or less sandy bottom
 weedy, one shank of shelf of
 coral, & considerable number of her-

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